



SOUTHERN UNIVERSITY – SHREVEPORT, LA

Fall 2010 Course Syllabus
BIOLOGY 104 - Lecture: Louis Collier Hall
Lecture: 3 Credit Hours
Separate Laboratory: 1 Credit Hour
Biology Department
Office Hours – (posted on office door)

INSTRUCTORS:

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MISSION STATEMENT

Southern University at Shreveport (SUSLA), an autonomous unit of the Southern University System A & M System, seeks to provide a quality education for its students, while being committed to the total community. This Institution awards certificates and associate degrees, prepares students for careers in technical and occupational fields, and offers courses and programs that are transferable to other colleges and universities. Dedicated to excellence in instruction and community service, this open enrollment institution promotes cultural diversity, provides developmental and continuing education, and seeks partnerships with business and industry. The University intends that all individuals should have the opportunity to receive educational experiences and related services, which are compatible with their varied interests, academic abilities, achievements, family backgrounds, motivations, needs, and goals.

COURSE MATERIALS: Textbook
Mader, Sylvia, Biology, 10th Edition, McGraw Hill, 2010.

SECTION I: COURSE IDENTIFICATION

COURSE DESCRIPTION: This course is designed to provide students an exposure to the principles and the basic concepts of biology. Emphasis is on the cell and the molecular aspects of cellular activities. Because this is a four (4) credit hour course, laboratory experiences will also be provided.

STUDENT LEARNING OUTCOMES (SLOS):

1. Written and Oral Communication

The graduate from Southern University at Shreveport should be able to:

Demonstrate proficiency in written and oral communication by composing and presenting structured text in a variety of oral and written forms according to purpose, audience, and occasion with implementation of thesis, supporting details, and idea development.

- Write and speak fluently and concisely, applying standard English conventions in grammar, mechanics, usage and punctuation
- Adapt speaking and writing to context, considering opposing viewpoints
- Present ideas coherently and logically without plagiarism
- Employ principles to influence attitudes, beliefs and actions when appropriate
- Summarize, analyze, and interpret oral and written texts, with the ability to identify assumptions and differentiate fact from opinion

2. Critical Thinking and Quantitative Reasoning

The graduate from Southern University at Shreveport should be able to:

Solve problems by interpreting, analyzing, evaluating and applying known information received from statistical and other data, past experience, problem-solving techniques, inference, the scientific method, mathematical equations, graphics, etc., to make decisions, judgments, and predictions, constructing well-supported and sustained arguments to justify conclusions.

- Demonstrate background knowledge of subject sufficient to understand the nature of a problem
- Define a problem verbally or by means of numerical or geometrical representatives of real-world phenomena
- Determine and employ solution techniques appropriate to solve a problem
- Make deduction from consequences
- Formulate alternatives
- Predict outcome
- Verify solution satisfies the requirement of the problem

3. Technological Competency

The graduate from Southern University at Shreveport should be able to:

Effectively utilize various modes and media using technology such as computers, computer software applications, the internet, and other technology to produce documentation, data and graphical presentations appropriate to various academic and professional arenas/venues.

- Create documents using various processing, data management, and spreadsheet technology for written presentations
- Create presentations using PowerPoint technology to accompany oral presentations
- Relay information through data or graphical representation

4. Research and Information Literacy

The graduate from Southern University at Shreveport should be able to:

- Explore scientific and academic topics using specific electronic search engines, i.e. Medline, iLink, OPAC, and LOUIS online databases.
- Research scientific and academic topics utilizing various resources presented in the library, to include but not limited to: books, periodicals, newspapers, microfilm, microfiche, audio and video cassettes, encyclopedias, atlases, and other reference materials, special collection and special services necessary in constructing a thesis/term paper, white paper or other informational document.
- Apply appropriate discipline-specific citation format, i.e. APA/MLA, to document sources used in the research of information.

5. Professional Deportment

The graduate from Southern University at Shreveport should be able to:

Demonstrate professional and ethical behavior as required by discipline-specific codes of conduct and as needed in a diverse and global workforce or in the articulation to a four-year college or university program.

- Model professional and ethical conduct
- Demonstrate responsible behavior and self-directed action
- Accept supervision and work effectively with supervisory personnel
- Habituate promptness
- Display integrity in practices and reporting of information

SECTION II: COURSE OUTLINES

(The sequence is subject to change at the instructor's discretion)

LECTURE OUTLINE:

Chapter 1: A View of Life

- 1.1 How to Define Life
- 1.2 Evolution, the Unifying Concept of Biology
- 1.3 How the Biosphere is Organized
- 1.4 The Process of Science

Chapter 2: The Basic Chemistry

- 2.1 Chemical Elements
- 2.2 Compounds and Molecules
- 2.3 Chemistry of Water
- 2.4 Acids and Bases

Chapter 3: The Chemistry of Organic Molecules

- 3.1 Organic Molecules – Lipids, Proteins, Nucleic Acids, ATP
- 3.2 Inorganic Compounds

Chapter 4: Cell Structure and Function

- 4.1 Cellular Level of Organization
- 4.2 Prokaryotic Cells

- 4.3 Introducing Eukaryotic Cell
- 4.4 The Nucleus and Ribosomes
- 4.5 The Endomembrane System
- 4.6 Other vesicles and Vacuoles
- 4.7 The Cytoskeleton

Chapter 5: Membrane Structure and Function

- 1.1 Plasma Membrane Structure and Function
- 1.2 Passive Transport Across the Membrane
- 1.3 Active Transport Across the Membrane
- 1.4 Modification of Cell Surfaces

Chapter 6: Metabolism: Energy and Enzymes

- 6.1 Cells and the Flow of Energy
- 6.2 Metabolic Reactions and Energy Transformations
- 6.3 Metabolic Pathways and Enzymes
- 6.4 Organelles and the Flow of Energy

Chapter 7: Photosynthesis

- 7.3 Light Reactions
- 7.4 Calvin Cycle Reactions

Chapter 8: Cellular Respiration

- 8.1 Cellular Respiration
- 8.2 Outside the Mitochondria: Glycolysis
- 8.4 Inside the Mitochondria

Chapter 9: The Cell Cycle and Cellular Respiration

- 9.1 The Cell Cycle
- 9.2 Mitosis and Cytokinesis
- 9.3 The Cell Cycle and Cancer
- 9.4 Prokaryotic Cell Division

Chapter 10: Meiosis and Sexual Reproduction

- 10.1 Halving the Chromosome Number
- 10.2 Genetic Variation
- 10.3 The Phases of Meiosis
- 10.4 Meiosis Compared to Mitosis
- 10.5 The Human Life Cycle
- 10.6 Changes in Chromosome Number and Structure

Chapter 12: Molecular Biology of the Gene

- 12.1 The Genetic Material
- 12.2 Replication of DNA
- 12.3 The Genetic Code of Life

Chapter 14: Biotechnology and Genomics

- 14.1 DNA Cloning
- 14.2 Biotechnology Products
- 14.3 Gene Therapy
- 14.4 Genomics

Chapter 20: Viruses, Bacteria, and Archae

- 20.1 Viruses, Viroids, and Prions

20.2 The Prokaryotes
20.3. The Bacteria

SECTION III: ASSESSMENT, EVALUATION AND GRADING SYSTEM

GRADING:

The final grade will be based on performance on assignments, quizzes, exams, laboratory investigations and write-ups. After all scores have been totaled, your average will be determined by your calculated percentage of the highest possible. An average between:

90 – 100 = A	80 – 89 = B	70 – 79 = C	60 – 69 = D	Below 60 = F
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COURSE REQUIREMENTS: Each student is required to:

1. Purchase textbook
2. Do assigned readings in textbook
3. Take notes and keep a notebook for future reference for review of material presented during lecture
4. Participate in individual and group projects.
5. Complete a scientific research paper

SECTION IV: COLLEGE AND CLASSROOM POLICIES:

ATTENDANCE POLICY: Tardiness should be avoided. It is the first fifteen minutes of class that the instructor will outline procedures and provide other important information at each class setting. Students are expected to attend all sessions of classes in which they are enrolled. If a student missed more than three hours of class time during the semester, the student's successful completion of the class will be hindered. The instructor will submit a completed Early Alert Referral Form to the Retention Coordinator, who will contact the student by letter or phone, to advise the student of the referral. If a student misses a class or test, due to an emergency, arrangement should be made with the instructor, to make up work missed on or before the next class meeting.

MAKE-UP EXAMINATION POLICY: Make-up examinations will be given by appointment only, when a medical excuse or documentation of an emergency is presented at the instructor's discretion. Make-up examinations will not be given during final examination week. All make-up examinations must be given when scheduled.

CHEATING POLICY: Dishonesty on exams, assignments, lab write-ups and plagiarism are serious offenses and subject to major penalties (see the Student Handbook). Students are expected to be aware of and abide by The University Honor's Code. Any student who is caught cheating on examinations, assignments, lab write-ups or plagiarism in written work, will be given a grade of zero (0) for the evaluation.

ELECTRONIC DEVICES IN CLASS POLICY: All electronic devices including, cell phones, pagers, CD players, radios and similar, must be turned off during class time. Any communication using any of these devices is prohibited in the classroom.

DISABILITY POLICY: Americans with Disabilities Act (ADA)
Southern University at Shreveport is in compliance with the regulation of the Americans with Disabilities Act (ADA). Students with documented disabilities are entitled to reasonable accommodations. A student who is defined under this Act and needs assistance of support services may contact the Student Support/Counselor Center located in the Fine Art Building. A

Counselor Coordinator will assist you with services that will supply your needs. The instructor should be notified of any accommodations needed for the course, during the first week of class.

PAID RECEIPT: A student is required to show the instructor a paid receipt on the first day of class. A student is not officially enrolled in class unless he or she has a stamped paid class schedule. It is the student's responsibility to ensure that all steps of the registration process have been completed before attending class.

SECTION V: WEB-ENHANCED

This is a Web-enhanced class. Because it is Web-enhanced, certain information may be provided through Blackboard. Students may be able to access the Course Syllabus, and Course Information related materials. Study Guides for upcoming examinations, and current grades may also be provided. To view this information, the steps below should be followed:

1. Click the "Blackboard Learning System" Link on the SUSLA home page.
2. Click on User Login.
3. Enter user name, password, and click login.
4. Under "My Courses", click on your Biology 104 course to view the Announcements.
5. View the six (6) Instructional Videos in the Announcements section to learn how to use Blackboard.